Firefly™

DIGITAL TRICHOSCOPE

DE330T User Manual

THANKS FOR SELECTING A FIREFLY TRICHOSCOPE

To take full advantage of this product's advanced capabilities, and to properly and safely use this product, please read the manual carefully.

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Caution: Changes or modifications not expressly approved by Firefly Global will void the purchaser's authority to operate the equipment and its warranty.

EC REP

MDSS GmbH
Schiffgraben 41
30175 Hannover, Germany

Tested To Comply
With FCC Standards
For Home or Office Use

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INTRODUCTION

The Firefly TrichoScope System consists of a digital TrichoScope, software application, three scope spacers for several magnification levels, glass lenses for studies on immersion media, and a USB cable. Only a computer equipped with a free USB port is needed to use the system.

The Firefly TrichoScope System is designed for effective operation under a variety of conditions and typical video parameters are set at the factory. The software allows users to adjust most parameters including Saturation, Hue, Brightness, Contrast and Sharpness for desired applications.

The System is equipped with an integrated polarizer ring. Rotating the ring enables multiple degrees of polarization for trichoscopy applications. The System is also equipped with a fine focus wheel which enables crystal clear images at very high degrees of magnification.

System Requirements

The Firefly TrichoScope System requires a user PC system running Windows XP Service Pack 2 or later operating system, a viewing screen, and a PC with an available USB 1.1 or 2.0 port.

Intended use

The Firefly TrichoScope System is intended to conveniently enable hair inspection and image recording.

User Profile

The Firefly TrichoScope System is intended for applications such as:

- Hairline examinations
- Immersion media studies
- Skin examinations
- Medical schools

Warranty Registration

Register your Firefly device at http://www.fireflyglobal.com/warranty-registration/ within two weeks of your purchase and maintain your original receipt.

WARNINGS & CAUTIONS

Please familiarize all operating personnel with the general safety information in this summary. Specific warnings and cautions are also found throughout this manual.

Warning

A warning statement in this manual identifies a condition or practice which if not corrected or discontinued immediately, could lead to injury, illness, or death.

- Do not use in the presence of flammable anesthetics.
- This product has no user serviceable/replaceable parts. Please refer all service to authorized service personnel.
- This instrument is not intended to be used in the eye.

Caution

A caution statement in this manual identifies condition or practice, which if not corrected or discontinued immediately, could lead to equipment failure, equipment damage, or data loss.

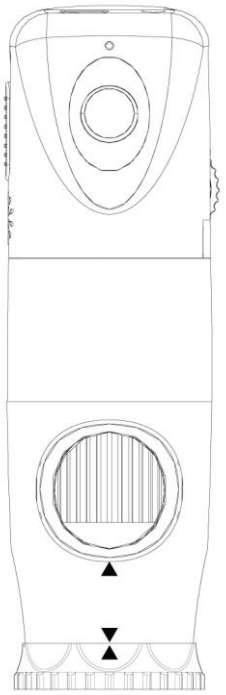
- In order to obtain optimum performance and ensure patient safety, thoroughly read this manual.
- Do not use the Firefly TrichoScope if you notice any signs of damage to the components of the system. Contact customer service for immediate assistance.
- Do not attempt to disinfect the Firefly TrichoScope System using glutaraldehyde products, ethylene oxide gas, steam or any other liquid or gas disinfectant.
- The signal output (USB Port) connector is intended for connection of only devices complying with IEC 60601-1, or other IEC standards (for example, IEC 60950), as appropriate to the device. Connecting additional devices to the Firefly TrichoScope System is not allowed.

- This product complies with current required standards for electromagnetic interference and should not present problems to other equipment or be affected by other devices. As a precaution, avoid using this device in close proximity to other equipment.

- Do not apply alcohol, chemicals, or water to the lens. Any liquids entering the optical assembly will damage internal components.

CHECK LIST

Before starting, check that all the following items have been included with your product. If anything is missing, contact your dealer.



TrichoScope

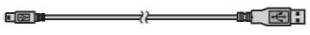
2 X Glass Covers

Software Application CD
(Mac Version available online)

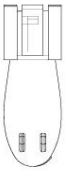
Long Scope Spacer

Medium Scope Spacer

Short Scope Spacer

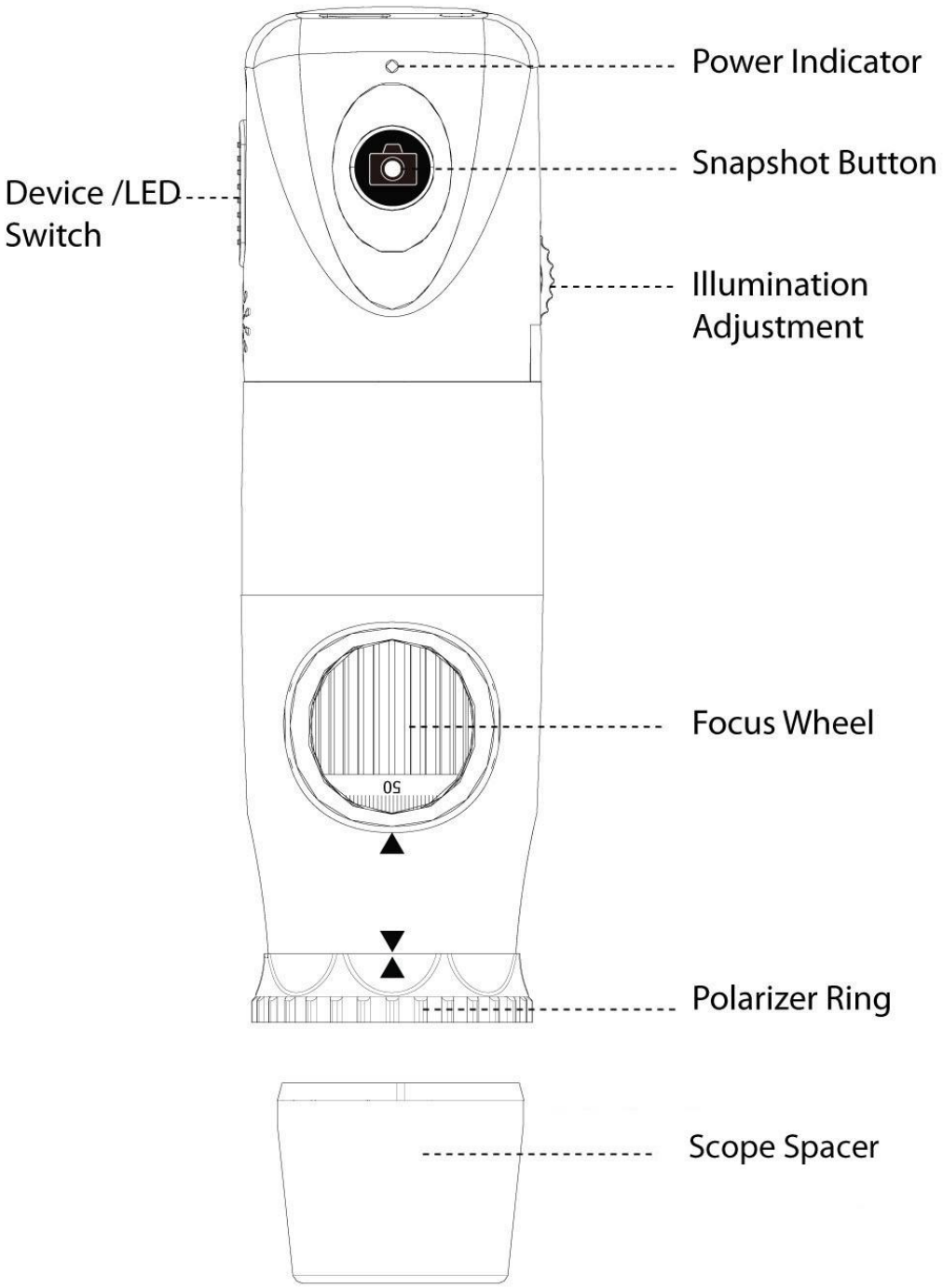


USB Cable



Clip

NOMENCLATURE



OPERATION

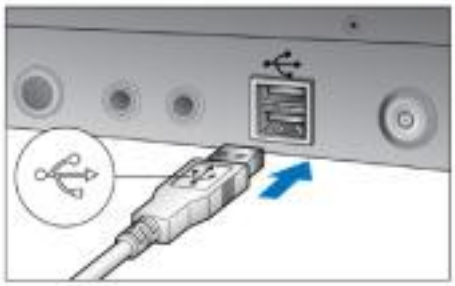
To obtain a clear image, please grip the Firefly TrichoScope; remain still and avoid vibration as much as possible during observation.

Setting up the software application：

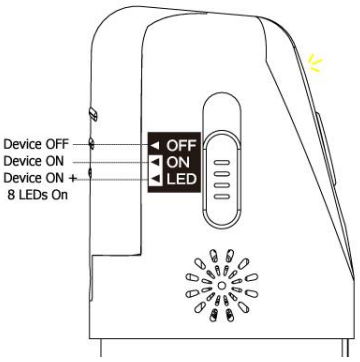
Prior to using the Firefly TrichoScope for the first time, install the FireflyPro software application following the instructions provided with the installation CD.

Connect to PC：

Connect the Firefly TrichoScope to the PC's USB port



Power the Device On:

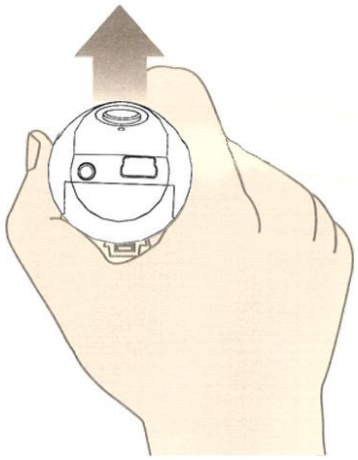


Towards the rear of the device, a switch allows the user to power the device ON and to activate the LEDs.

- OFF: Switch off the device
- ON: Switch the device ON
- LED: Switch the device On and enable 8 LEDs for maximum illumination

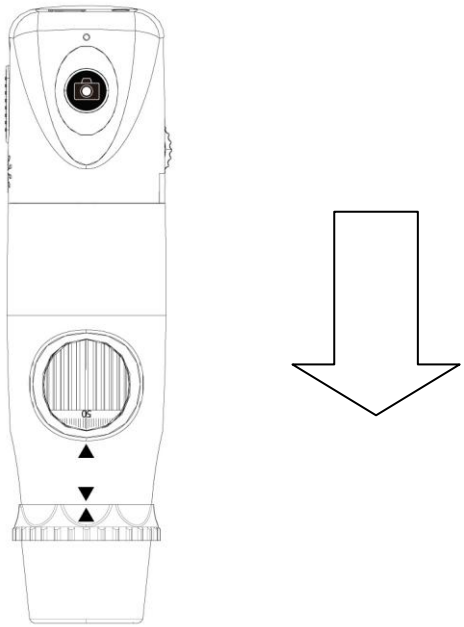
Recommended holding position:

It is suggested to hold the TrichoScope, transparent cover forward, with the thumb held on the equipment. This holding position offers relative stability and allows lens control. The index finger is still free to rotate and adjust the focus wheel (as shown).



Stabilizing the Device:

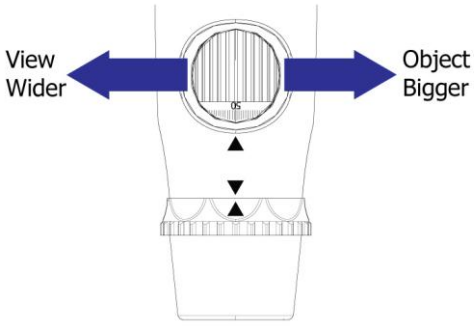
When there is a need for high zoom, maintaining body stability becomes more paramount. In such instances, it is suggested that the digital TrichoScope focus wheel opening should be placed towards the user, and the transparent scope spacer vertically downward. This enables easy access to the focus wheel and a very stable position. (Shown below)



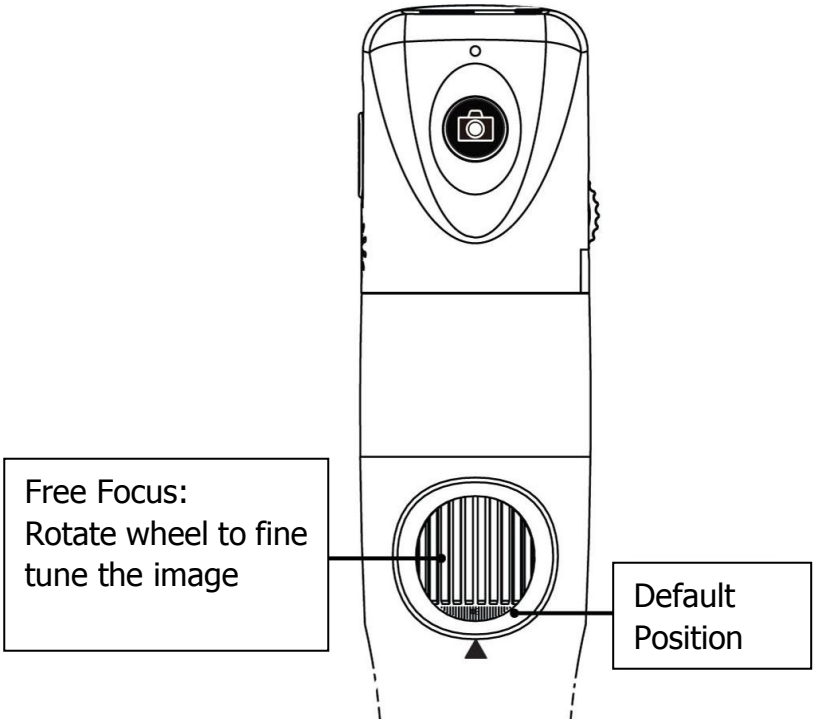
Device vertically downward (stable observation)

Using Focus:

Based on the relative height of the observed object, the focus wheel can be turned for a clear image. When a higher magnification is required, the focus wheel can be turned to the left (see below). If a larger field of view is required (lower magnification), the TrichoScope can be moved farther away and the wheel turned to the right.



Default Position: Match the scale "50" to arrow mark.



Using the Scope Spacers to adjust Magnification Levels:

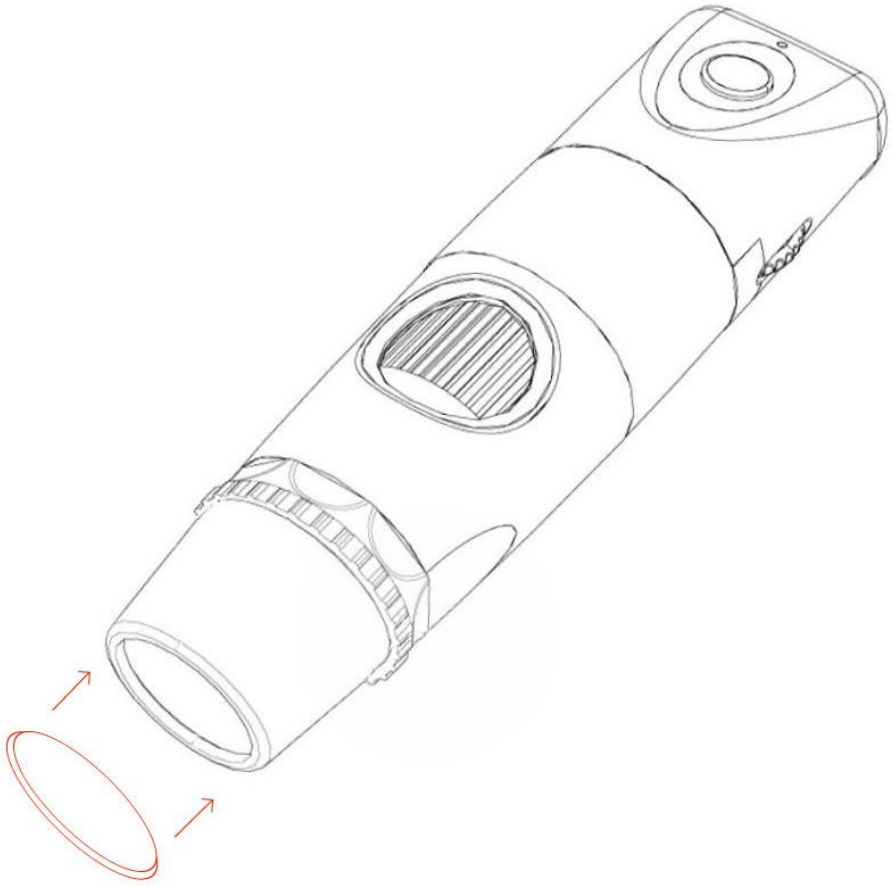
There are three different size scope spacers that are included with the Firefly system to allow for multiple focal points and levels of magnification. By attaching the short, medium, or long scope spacer to the front of the device the following different magnification levels can be achieved.

Scope Spacer Size	Magnification
Short	45x
Medium	35x, 120x
Long	25x

Use the focus roller to achieve the different levels of magnification. Turn the wheel to the right to reach the higher magnification level and turn the wheel to the left to reach the lower magnification level.

Attaching the Glass Cover:

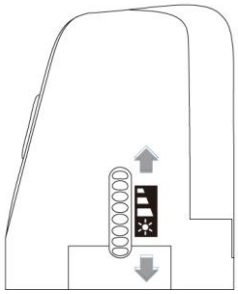
The glass covers can be attached by pressing the narrow side of the glass cover into the scope spacer opening until it is tight and flush. To remove the glass cover detach the scope spacer from the scope and push the glass cover out.



Brightness Adjustment:

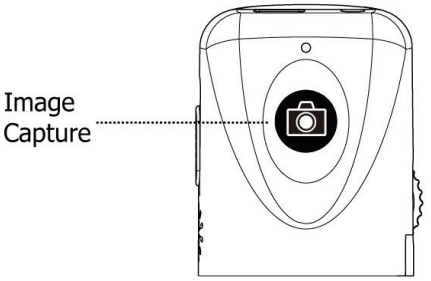
On left rear side of the TrichoScope, a knob allows the user to control the brightness of the LEDs:

- Backward Turn: Decrease Brightness
- Forward Turn: Increase Brightness



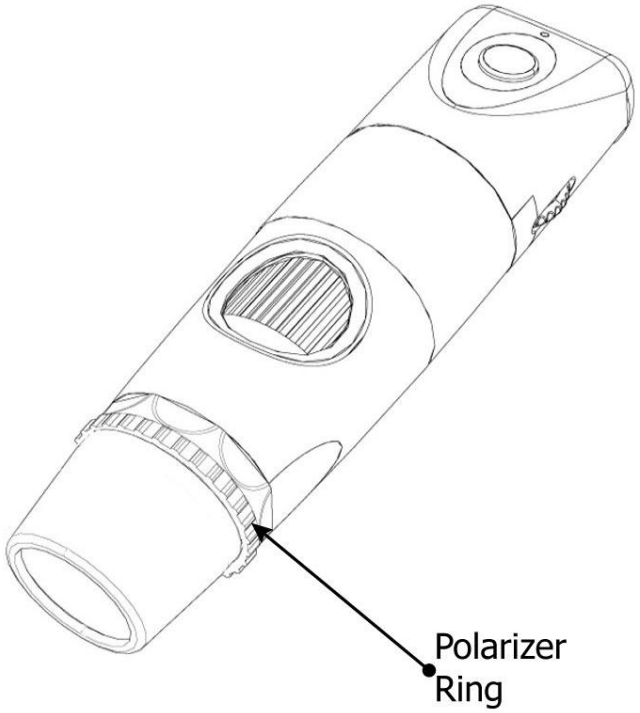
Using the image capture control:

Press and release the Capture button to capture image frames. The system will generate a shutter sound from the PC speaker as confirmation.



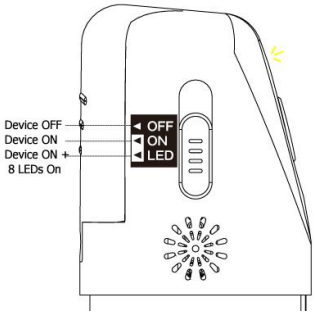
Using the Polarizer:

The DE330T is equipped with an integrated polarizer feature. To activate polarization, turn the black ring behind the nose extender. Multiple degrees of polarization may be achieved by gradually turning the polarizer ring from 0 degrees to 360 degrees.



Standby and Remove device:

To temporarily turn off or remove the device, slide the power button to the "OFF" position. Exit the FireflyPro software application. Next, unplug the USB cable to remove the device.



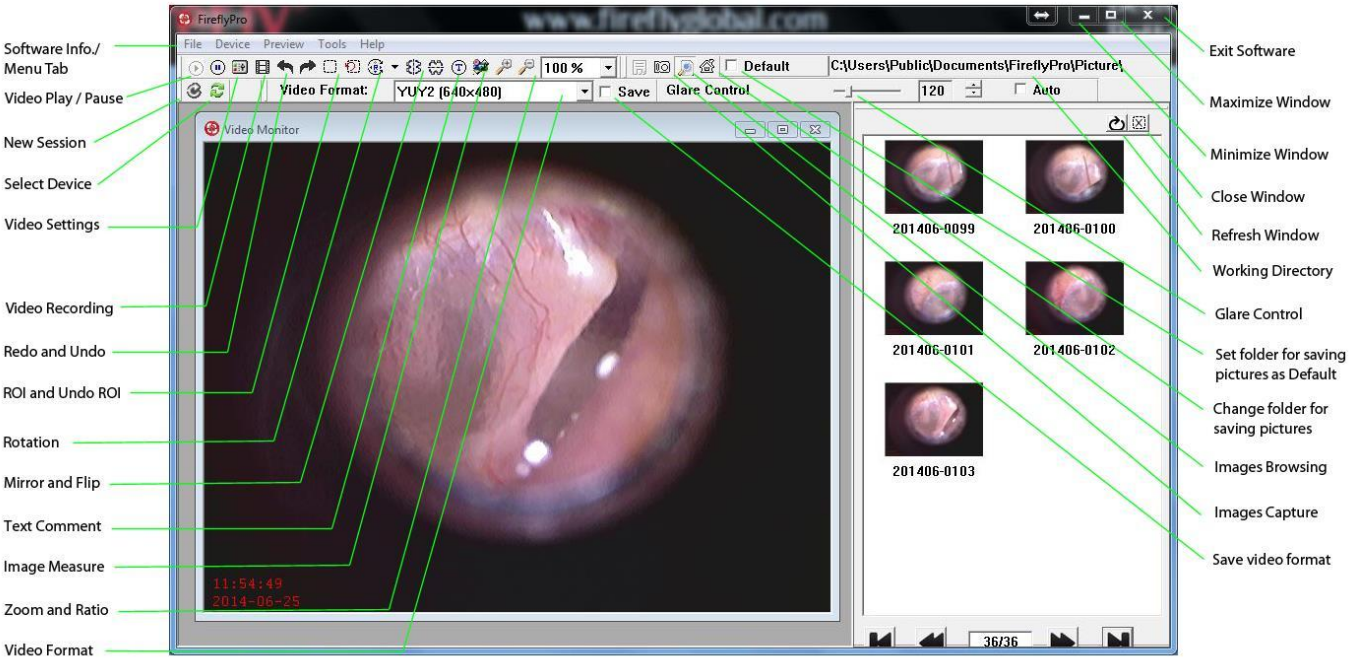
Launch the Software Application:

Double-click the FireflyPro icon on your computer desktop:

Viewing the Images:

FireflyPro software controls your Firefly TrichoScope. The TrichoScope communicates with the PC through the USB compact receiver. The user can configure the video properties, review live images, capture images, record video clips and perform a variety of powerful measurement and documentation functions.

The main features of FireflyPro are shown below:



Saving Images:

There are three ways to save an image:

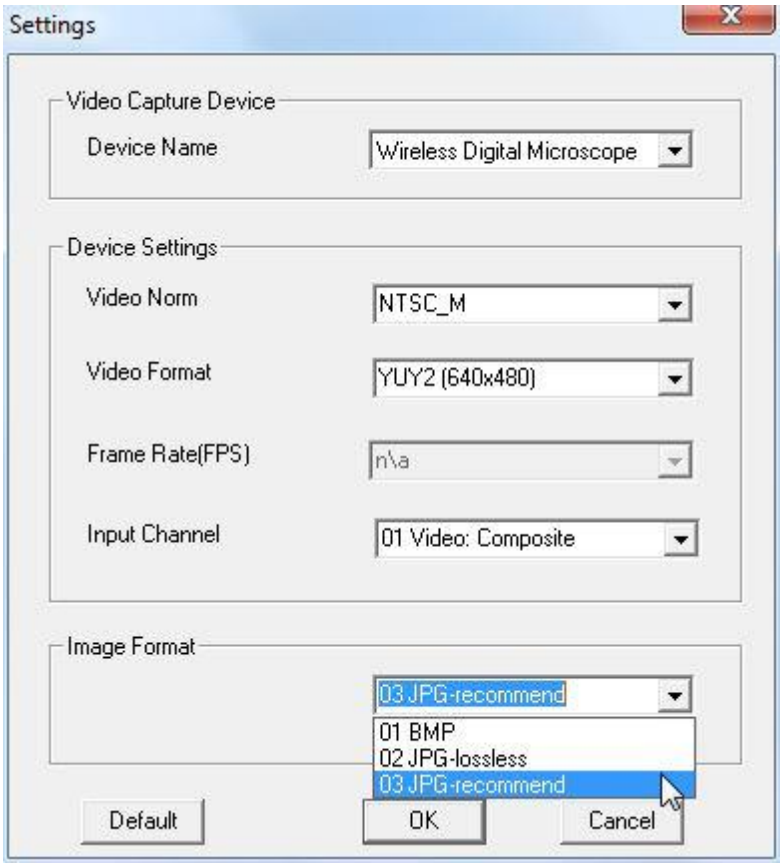
1. Pressing the snapshot button on the Firefly device.
2. Clicking the Camera icon in the menu bar.
3. Pressing the center button on your mouse (middle click).

Changing Image File Type:

Select between BMP, JPG-lossless or JPG-recommend image file types. There are two ways to change the image file type:

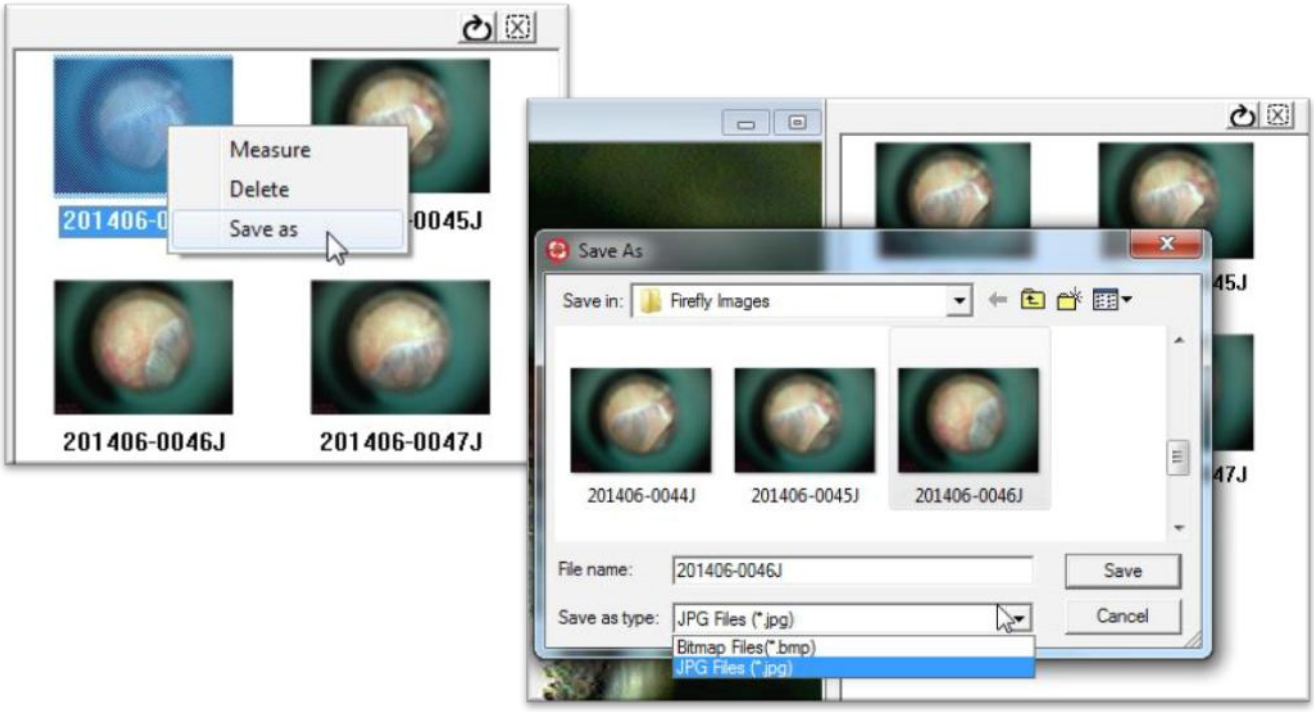
1. Change the Default Image File Type:

In the menu bar go to Device > Settings, then select the desired image file type using the Image Format dropdown selection. This will set the default format for all captured images.



2. Change the Format of an Existing Image

From the Image View Bar, Right click on an image and select Save as. Then select the file type from the dropdown and click Save.



Changing the Location where Images are Saved

Changing the Location of an Image Already Taken:

Right click on the image in the Image View Bar and click Save As. You can then select the saving location on your computer using the dropdown directory field at the top of the window.

Changing the Default Location for Saving Images:

Click the 'Save picture path' icon. Select the desired location from the drop down directory and click OK. Next to the 'Save picture path' icon is a Default checkbox. Default Check this box if you wish to save the new picture path as the default location for saving images.

TOOL BARS:

The Tools bars enable quick access to the functions of FireflyPro software. The tool bars can be grouped into Control, Images and Device tool bar sets.

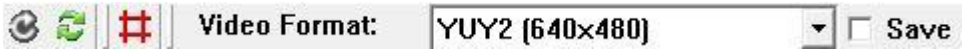
Control Tool bar:

Icon	Icon Name	Function Description
	Play	Start the video stream preview
	Pause	Freeze live video image frame
	Video Setting	Configure video properties
	Video Recording	Video recording and settings (frame, period, quality, codec etc...)
	Undo	Undo the previous Rotation, Text Comment and Zoom
	Redo	Redo the previous Rotation, Text Comment and Zoom
	ROI	Select region of interest (ROI) on live video stream
	Undo ROI	Revoke ROI selection
	Rotation	Rotate live video 0°, 90°, 180°, 270°
	Mirror	Mirror live video horizontally
	Flip	Flip live video vertically
	Text Comment	Add text layer on image
	Image Measure	Launch image measurement application
	Zoom +	Zoom-in live video up to 300%
	Zoom -	Zoom-out live video down to 10%
100 %	Zoom Ratio	Set Zoom ratio from 10-300

Image tool bar:

Icon	Icon Name	Function Description
	Save Image	Store frozen image
	Image Capture	Capture and store instant image from live video
	Image Browsing	Browse images in working directory
	Working Directory	Pop-up to select working directory path
C:\Documents and Settings\My Documents\Firefly\Picture		Working directory path

Device Tool bar:



Icon	Icon Name	Function Description
	Refresh Camera View	Refreshes the live video connection in the camera window
	Select Device	Select the proper device for best results
	Enable Grid	Creates a grid in the Video Monitor – Grid is 5x5mm when plastic nose is touching target surface
YUY2 (640x480)	Change Video Format	Select between multiple video and resolution options
Save	Save Video Format	Saves the selected video format as new default format

Note: Make sure you have the proper device selected. If you're not sure use the Select Device icon.

MAINTENANCE AND SERVICE

Cleaning recommendation:

CAUTION Do not apply alcohol, chemicals, or water to the lens. Any liquids entering the optical assembly will damage internal components. Use a dry cloth to clean the Digital Firefly TrichoScope System on a weekly basis.

Recycling the system components:

Within the EU

Do not dispose of this product as unsorted municipal refuse. Submit for separate collection as specified by Directive 2002/96/EC of the European Parliament and the Council of the European Union on Waste Electronic and Electrical Equipment (WEEE).

If this product is contaminated, this directive does not apply. For more specific disposal information contact Customer Service.

Outside the EU

When the product and its components reach end of life, recycle the product according to national, state, and local regulations.

Service policy

All repairs on products under warranty must be performed or approved by Firefly or its authorized resellers. Unauthorized repairs will void the warranty. In addition, whether or not covered under warranty, any product repair shall exclusively be performed by Firefly-certified service personnel.

If the product fails to function properly — or if you need assistance, service, or spare parts — contact your Firefly reseller.

Before contacting your reseller, try to duplicate the problem and check all accessories to ensure that they are not causing the problem. When calling, please be prepared to provide:

- Product name and model number and complete description of the problem.
- Serial number of your product (if applicable).
- Complete name, address and phone number of your facility.
- For out-of-warranty repairs or spare parts orders, a purchase order (or credit card) number.
- For parts orders, the required spare or replacement part numbers.

If your product requires warranty, extended warranty, or non-warranty repair service, please contact your Firefly reseller. A customer service representative will assist you in troubleshooting the problem and will make every effort to solve it over the phone, avoiding potential unnecessary returns. In case a return cannot be avoided, the representative will record all necessary information and will provide a Return Authorization number, as well as the appropriate shipping address. The Return Authorization number must be obtained prior to any return.

If you have to return your product for service, follow these recommended packing instructions:

- Disconnect all hoses, cables, sensors, power cords, and ancillary products (as appropriate) before packing, unless you suspect they are associated with the problem.
- Wherever possible use the original shipping carton and packing materials.
- Include a packing list and the Return Authorization number.

It is recommended that all returned goods be insured. Claims for loss or damage to the product are the responsibility of the sender.

SPECIFICATIONS

Item	Specification
Weight	Approximately 100 g (0.22 lb)
Dimensions (approximate)	Length: 13.0 cm (5.2 inches) Height: 3.6 cm (1.5 inches) Width: 4.0 cm (1.6 inches)
Power	USB 5VDC, 150mA
Protection against ingress of water	IPXØ
Operating conditions	
Temperature	+10°C to +40° C (+50°F to +104°F)
Relative humidity	30% to 75% noncondensing
Altitude	700 to 1060 hPa
Shipping and storage conditions	
Temperature	-20°C to +49°C (-4°F to +120°F)
Relative humidity	95% noncondensing max.
Safety Compliance	FCC, CE and RoHS compliant
Patent	Patent Pending

LIMITED WARRANTY

Limited Hardware Warranty (through distributors & resellers)

Firefly Global hardware products come with a 1-year limited hardware warranty. The warranty is extended through Firefly Global authorized representatives and resellers. If you have a warranty claim, please contact the store, distributor, or website through which the product was purchased.

Register your Firefly device at http://www.fireflyglobal.com/warranty-registration/ within two weeks of your purchase and maintain your original receipt.

What is covered by this limited hardware warranty?

This limited hardware warranty covers defects in materials and workmanship in your Firefly Global hardware products.

What is not covered by this limited hardware warranty?

This limited hardware warranty does not cover:

- Software, including the operating system and software added to or bundled with the Firefly Global hardware products
- Problems that result from:
  - External causes such as accident, abuse, misuse, or problems with electrical power
  - Servicing not authorized by Firefly Global
  - Usage that is not in accordance with product instructions
  - Failure to follow the product instructions
  - Problems caused by using accessories, parts, or components not supplied by Firefly Global
- Products with missing or altered serial numbers
- Products for which Firefly Global or its distributors have not received payment
- Normal wear and tear

THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE (OR JURISDICTION TO JURISDICTION). FIREFLY GLOBAL'S RESPONSIBILITY FOR MALFUNCTIONS AND DEFECTS IN HARDWARE IS LIMITED TO REPAIR AND REPLACEMENT AS SET FORTH IN THIS WARRANTY STATEMENT. ALL EXPRESS AND IMPLIED WARRANTIES FOR THE PRODUCT, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTIES AND

CONDITIONS OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED IN TIME TO THE TERM OF THE LIMITED WARRANTY PERIOD REFLECTED ON YOUR PACKING SLIP OR INVOICE. NO WARRANTIES, WHETHER EXPRESS OR IMPLIED, WILL APPLY AFTER THE LIMITED WARRANTY PERIOD HAS EXPIRED. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THIS LIMITATION MAY NOT APPLY TO YOU.

WE DO NOT ACCEPT LIABILITY BEYOND THE REMEDIES PROVIDED FOR IN THIS LIMITED HARDWARE WARRANTY OR FOR CONSEQUENTIAL OR INCIDENTAL DAMAGES, INCLUDING, WITHOUT LIMITATION, ANY LIABILITY FOR THIRD-PARTY CLAIMS AGAINST YOU FOR DAMAGES, FOR PRODUCTS NOT BEING AVAILABLE FOR USE, OR FOR LOST DATA OR LOST SOFTWARE. OUR LIABILITY WILL BE NO MORE THAN THE AMOUNT YOU PAID FOR THE PRODUCT THAT IS THE SUBJECT OF A CLAIM. THIS IS THE MAXIMUM AMOUNT FOR WHICH WE ARE RESPONSIBLE.

How long does this limited hardware warranty last?

The limited hardware warranty on all Firefly Global products begins on the date of the packing slip, invoice, or receipt. The warranty period is not extended if a warranted product or any parts are repaired or replaced. Firefly Global may change the availability of limited hardware warranties, at its discretion, but any changes will not be retroactive.

What do I do if I need warranty service?

Before the warranty expires, please contact the store, distributor, or website through which the product was purchased.

What will Firefly Global do?

Firefly Global or its authorized representative or reseller will repair any Firefly Global hardware products returned that prove to be defective in materials or workmanship. If Firefly Global or its authorized representatives are not able to repair the product, we will replace it with a comparable product that is new or refurbished.

When you contact our authorized representatives or resellers via phone or email, they will issue a Return Material Authorization Number for you to include with your return. You must return the products in their original or equivalent packaging, prepay shipping charges, and insure the shipment or accept the risk if the product is lost or damaged in shipment. The repaired or replacement products will be returned to you. The reseller or authorized representative will pay to ship the repaired or replaced products to you if you use a delivery address in the country where the reseller is located. Otherwise, the product will be shipped to you freight collect.

If it is determined that the problem is not covered under this warranty, you will be notified and informed of service alternatives that are available to you on a fee basis.

How will you fix my product?

We use new and refurbished parts made by various manufacturers in performing warranty repairs and in building replacement parts and systems. Refurbished parts and systems are parts or systems that have been returned to Firefly Global, some of which were never used by a customer. All parts and systems are inspected and tested for quality. Replacement parts and systems are covered for the remaining period of the limited hardware warranty for the product you bought. Firefly Global owns all parts removed from repaired products.

May I transfer the limited hardware warranty?

Limited hardware warranties are not transferable.

TROUBLESHOOTING

Please visit the FAQ section of our website for the latest troubleshooting information and additional support. http://www.fireflyglobal.com/

Thank you for choosing Firefly.

Firefly™

www.fireflyglobal.com